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A new, unexpected species of *Lemaireia* NÄSSIG & HOLLOWAY, 1987 from the South of Vietnam (Lepidoptera: Saturniidae)

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Abstract: A new (fifth) species of the genus *Lemaireia*, ***inexspectata* n. sp.**, is described from Rung Cat Tien near Bao Loc in the South of Vietnam (holotype ♂ in Senckenberg-Musum, Frankfurt/Main) and illustrated in colour. Externally it resembles closely the two species *L. luteopeplus* and *L. chrysopeplus*, but the male genitalia are unique; there is a big, corkscrew-like internal process on the valves and a spinose prolongation of the aedeagus tube besides the vesica. ♀ and preimaginal instars are unknown. The phylogenetic placement of the new species is tentatively discussed. Vietnam is the second area (after Sumatra) from where two species of the genus are known (although at present not sympatric). *L. inexspectata* n. sp. is known only from the type locality.

Eine neue, unerwartete Art der Gattung *Lemaireia* NÄSSIG & HOLLOWAY 1987 aus dem Süden Vietnams (Lepidoptera: Saturniidae)

Zusammenfassung: Eine neue (fünfte) Art der Gattung *Lemaireia*, ***inexspectata* n. sp.**, wird von Rung Cat Tien bei Bao Loc im Süden Vietnams beschrieben (Holotyp ♂ im Senckenberg-Musum, Frankfurt/Main) und farbig abgebildet. Äußerlich erinnert die neue Art stark an die zwei Arten *L. luteopeplus* und *L. chrysopeplus*, von denen sie habituell nicht zu trennen ist; aber die männlichen Genitalien sind einmalig: Es gibt einen großen, korkenzieherförmigen Fortsatz auf der Innenseite der Valven sowie eine mit Dornen bedeckte, sackförmige Ausstülpung des Aedoeagus seitlich der Vesica. Das ♀ und die Präimaginalstadien sind unbekannt. Die phylogenetische Ableitung der neuen Art wird andiskutiert. Nach Sumatra ist Vietnam das zweite Gebiet, von dem zwei Arten der Gattung bekannt sind (wenn auch bisher nicht sympatrisch). *L. inexspectata* n. sp. ist bisher nur von der Typenserie und der Typuslokalität bekannt.

Introduction

The genus *Lemaireia* was erected by NÄSSIG & HOLLOWAY (1987, in HOLLOWAY 1987) for two species described earlier: *loepoides* BUTLER, 1880 from

[1] 45th Contribution to the knowledge of the Saturniidae.

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Borneo, West Malaysia and Sumatra (type species of the genus), and *chrysopeplus* TOXOPEUS, 1940 from Java and Sumatra. NÄSSIG & HOLLOWAY (1988) described one new species, *luteopelus*, which is known now from NE India (nominotypical subspecies) and Burma, Thailand, S China, and N Vietnam (subspecies *aureopeplus* NÄSSIG & HOLLOWAY, 1988). A fourth species of the genus was then described by NÄSSIG & LAMPE (1989) from Mindanao, Philippines (*schintlmeisteri* NÄSSIG & LAMPE, 1989). A distribution map is given by NÄSSIG & LAMPE (1989). The presence in South China

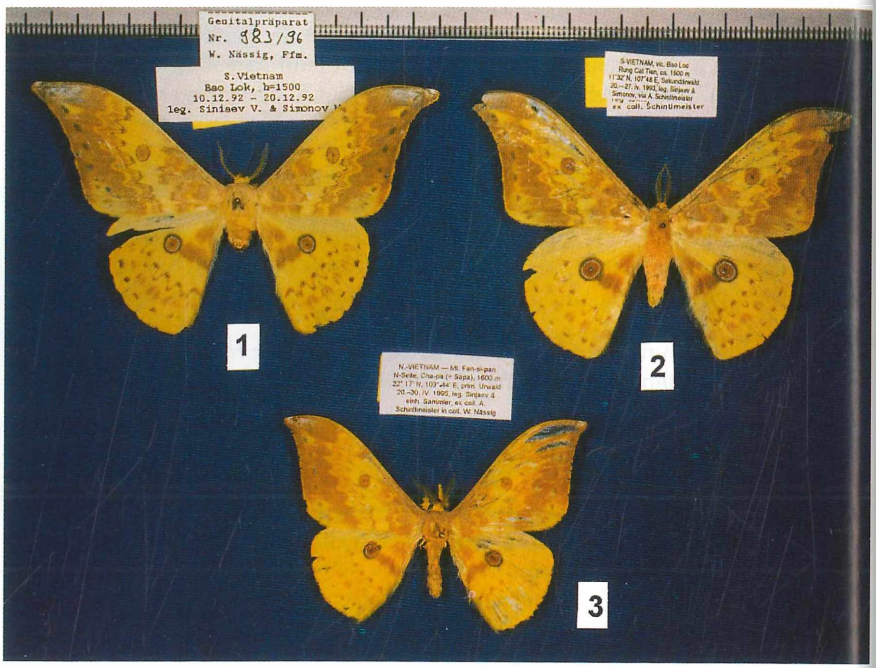

Fig. 1: Holotype ♂, **Fig. 2:** Paratype ♂ of *Lemaireia inexspectata* n. sp., Vietnam (South), near Bao Loc. **Fig. 3:** *L. luteopeplus aureopeplus,* ♂, for comparison. Vietnam (North), Mt. Fan-si-pan area. All specimens in coll. W. NÄSSIG in Senckenberg-Museum, Frankfurt. Scale bar in cm/mm.

Fig. 4a: ♂ genitalia of *Lemaireia inexspectata* n. sp., GP no. 983/96 W. NÄSSIG, holotype. **Fig. 4b:** ♂ genitalia of *Lemaireia inexspectata* n. sp., GP no. 991/96 W. NÄSSIG, paratype. **Fig. 5:** ♂ genitalia of *L. luteopeplus aureopeplus,* GP no. 984/96 W. NÄSSIG, North Vietnam, Mt. Fan-si-pan area, for comparison. — Scale bar = 1 mm, all pictures to the same scale. — Compare the illustrations of other species in NÄSSIG & LAMPE (1989).

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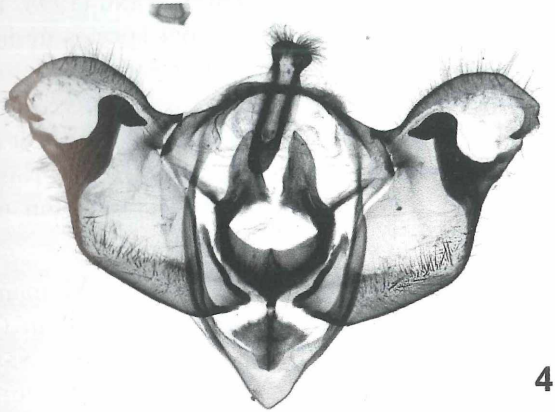

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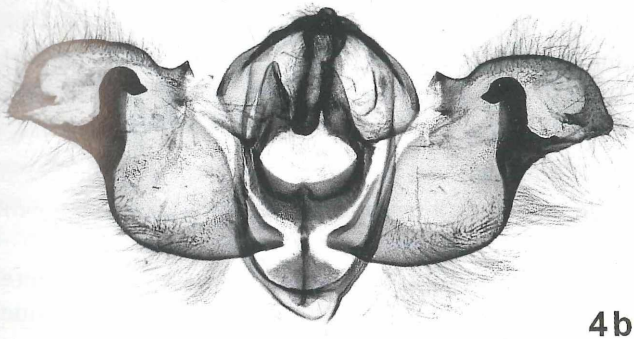

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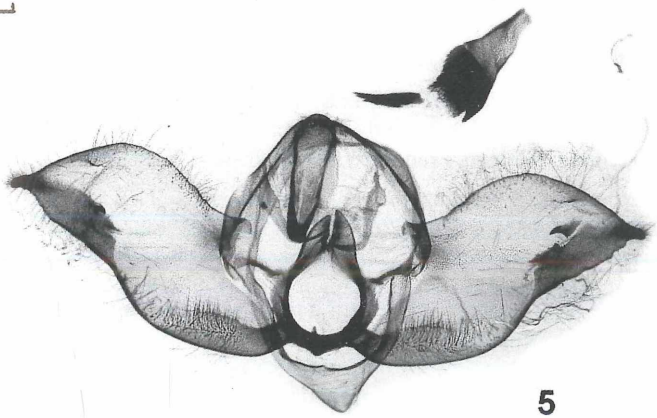

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of *L. luteopeplus aureopeplus* was confirmed by ZHU & WANG (1993, 1996), who illustrated the genitalia of a ♂ specimen of that species under the name *"Syntherata loepoides"* (misidentification). Observations on the preimaginal instars of *L. luteopeplus* were provided by LAMPE & NÄSSIG (1989) and PINRATANA & LAMPE (1990), and a little information on the first instar larva of *L. loepoides* by NÄSSIG et al. (1996, Appendix I). See NÄSSIG & HOLLOWAY (1988) and NÄSSIG & LAMPE (1989) for a discussion of the possible phylogeny of the genus.

The presence of *L. luteopeplus aureopeplus* in the North of Vietnam was already reported by NÄSSIG & HOLLOWAY (1988) after a pair in C. LEMAIRE's collection (♂ dissection no. 3486 C. LEMAIRE) in Musée National d'Histoire Naturelle, Paris. Three further ♂ specimens from northern Vietnam (Mt. Fan-si-pan, northern slopes, Cha-pa, 1600 m, 22°17' N, 103°44' E, 20.-30. IV. 1995, leg. SINJAEV & local collectors, via coll. A. SCHINTLMEISTER in coll. W. NÄSSIG in Senckenberg-Museum, Frankfurt), one with dissection no. 984/96 WNG, are known now. Additional material of *L. luteopeplus* from the Mt. Fan-si-pan area and a few other localities in the North of Vietnam is in coll. R. BRECHLIN, Pasewalk (pers. comm.), who also reared the species.

However, during the course of a routine dissection, two specimens from southern Vietnam (one cited by NÄSSIG 1994a as *"L. luteopeplus"*) were found to have genitalia very different from *L. luteopeplus*, and therefore they are described here as a new species. Only one additional specimen of that new species is presently known, summing up to 3 specimens in total. The new species is the fifth species of the genus *Lemaireia* known today.

Lemaireia inexspectata n. sp.

Holotype ♂: "S. Vietnam, Bao Lok [sic], h = 1500 [m], 10. XII. [19]92-20. XII. [19]92, leg. SINIAEV V. & SIMONOV M.", via A. SCHINTLMEISTER in coll. W. NÄSSIG in Senckenberg-Museum, Frankfurt; GP W. NÄSSIG 983/96, SMFL no. 4144.

Paratypes: 1 ♂, S-Vietnam, vic. Bao Loc, Rung Cat Tien, ca. 1500 m, 11°32' N, 107°48' E, Sekundärwald, 20.-27 IV. 1993, leg. SINJAEV & SIMONOV, via A. SCHINTLMEISTER in coll. W. NÄSSIG in Senckenberg-Museum, Frankfurt, GP 991/96, SMFL no. 4145 (this specimen was misidentified as *L. luteopeplus aureopeplus* by NÄSSIG 1994a before dissection); 1 ♂, same data as holotype, in coll. R. E. J. LAMPE, Nürnberg.

Description, ♂: Externally, the new species does not differ diagnostically from *L. luteopeplus* or from *L. chrysopeplus* (Figs. 1-3). But the male

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genitalia (Fig. 4) show very clear characters, as it is the case in all species of the genus (for comparison, see the genitalia illustrations of the other species in NÄSSIG & HOLLOWAY 1988 and NÄSSIG & LAMPE 1989): Generally more sclerotized than *L. luteopeplus* (see Fig. 5, from northern Vietnam), in general shape and degree of sclerotization somehow resembling *L. loepoides,* but with clear differences: Uncus narrower and less voluminous than in *L. luteopeplus,* but with a clear "knob" at the dorsal end, covered with short hairs. Aedeagus sheath with two large tongue-like prolongations dorsally; basally an unusually large, rhomboidal disto-ventral plate; the disto-ventral tip above this plate is tiny only. Aedeagus strongly sclerotized, large, bulbous; on the right side with a long, spinose prolongation[2] The vesica, extruding to the left side ventrally, with a broadly sclerotized, spinose tip. On the left side there is a scobinate sclerotization of the distal part of the aedeagus tube dorsally of the vesica. The valves in general shape resembling those of *L. loepoides,* but with a unique structure: there is a very big, corkscrew-like internal process, possibly derived from one of the inconspicuous internal hooks known from other species of the genus. On the dorso-distal base of this process a tiny spine; the valve apex with a slightly more prominent hook bent backwards. The ♂ genitalia are outstanding and allow an easy and safe diagnosis. The ♀ genitalia are unknown.

The three ♂♂ of *L. inexspectata* from S. Vietnam are larger (length of forewing [lfw] 40,3 mm, n = 3) than those 3 ♂ specimens of *L. luteopeplus aureopeplus* from the Fan-si-pan area in the North (lfw 32,7 mm, n = 3) in the author's collection; but ♂♂ of *L. luteopeplus aureopeplus* from N. Thailand are also larger (lfw 38,0 mm, n = 5). Thus, the size appears not to be a character to distinguish the two species reliably. The fw apex of two of the 3 ♂♂ of *L. inexspectata* is slightly more produced (falcate) than in most ♂♂ of *L. luteopeplus,* but this character is evidently as well not reliable.

♀ and preimaginal instars: Unknown.

Distribution: Thus far, the new species is only known from the type locality near Bao Loc in southern Vietnam. Vietnam is, after the Indonesian island of Sumatra (see NÄSSIG & HOLLOWAY 1988, NÄSSIG et al. 1996),

[2] This spinose prolongation is to some degree resembling the lateral "spine" of the aedeagus of several species of the genus *Saturnia* SCHRANK, 1802 (subgenus *Rinaca* WALKER, 1855, see NÄSSIG 1994b), but it has, distally, a spinosely rounded rather than acute tip. Whether this is a synapomorphic or homologue character is not yet clear; the phylogenetic placement of *Lemaireia* is not yet assessed.

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the second area where two species of the genus *Lemaireia* are found. According to the small number of specimens known presently, the distribution areas of the two species appear not to overlap, but our present knowledge is sparse. Samplings of the Institute of Entomology of the Czech Academy of Sciences in České Budějovice (K. SPITZER, pers. comm.) at several localities in Vietnam did not result in any *Lemaireia* thus far.

Ecology: Unknown. The type series has been collected in December and April at about 1500 m elevation. Most likely the species is polyvoltine. At least the caterpillars of *L. luteopeplus aureopeplus* are gregarious (LAMPE & NÄSSIG 1989).

Etymology: The name of the new species expresses the surprise to have found a fifth species of the genus under specimens which previously have been misidentified as *L. luteopeplus aureopeplus*. We did not expect another species of the genus in Vietnam.

Discussion

From external morphology, the species clearly belongs to the group of *L. chrysopeplus* and *L. luteopeplus* (with the red inner ring of the wing ocelli). But the genitalia are somehow (in some characters) mediating between this group and the group of *L. loepoides* and *L. schintlmeisteri*. Presently the phylogenetic placement of *L. inexspectata* is not yet clear; it may be an offspring of *L. luteopeplus* or of the common ancestor of [*L. luteopeplus* + *L. chrysopeplus*], or it may even be the sister-species of all other species of the genus. Further research is necessary. It would probably be helpful if data about the preimaginal morphology of all species were available.

The species of *Lemaireia* are found only infrequently at light. Compared with the long series of many other saturniid species collected in Vietnam during the recent years, *Lemaireia* usually arrive only in small numbers. The cause for this is unknown; it may be a special ecology and/or behaviour of the species. For example, the species *L. schintlmeisteri* from Mindanao (Philippines) is still known from the type series only; no later collecting attempt succeeded in finding the species again (although there were many expeditions collecting at light on Mindanao since then).

Thus far, the new species was found only in the Rung Cat Tien area near Bao Loc in southern Vietnam. This mountainous area is the southernmost

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spur of the mountain-chain reaching down south from China via Laos and Vietnam. It is a somehow isolated group of mountains (with areas below 500 m between these and the next mountains to the North), and it may well be that *Lemaireia inexspectata* is an endemic of this area. Further studies are necessary to assess the distribution of the two species in Vietnam and whether there is sympatry of the two taxa.

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Corrigenda

Zu: ROTH, J. T., & ERNST, M. (1995): **Der seit weit mehr als 50 Jahren verschollene *Cleorodes lichenaria* HUFNAGEL 1767 im Sommer 1993 wieder aufgefunden (Lepidoptera: Geometridae).** — Nachr. entomol. Ver. Apollo, Frankfurt/Main, N.F. **15** (4): 493–497.

Leider hat sich bei den Flechtennamen in diesem Artikel ein Übertragungsfehler eingeschlichen:

Die Flechte „*Parmelia glabra*" auf Seite 495 muß richtig heißen *Parmelia glabratula* (LAMY) NYL.

Mathias ERNST

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